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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,883	01/17/2001	Hiroyuki Shibata	23.1093	4981

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EXAMINER

KOVALICK, VINCENT E

ART UNIT PAPER NUMBER

2673

DATE MAILED: 12/12/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/760,883

Applicant(s)

SHIBATA ET AL.

Examiner

Vincent E Kovalick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7, 11, 20 and 24 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-6, 8-10, 12-15, 17-19, 21-23, 25-28 and 30-47 is/are rejected.
- 7) ☒ Claim(s) 3, 16 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/23/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) Z.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. This Office Action is in response to Applicant's Preliminary Amendment and Request for Continued Examination dated October 23, 2003 in response to USPTO Final Office Action dated May 23, 2003.

In that new prior art has been introduced in the rejection of claims 1, 10, 14, 19, 23, 27, 34, 35, 36, 38 and 39, Applicant's remarks relative to said claims is rendered moot.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 10, 14-15, 19, 23, 27-28, 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison (USP 3,906,482).

Relative to claims 1, 10, 14, 19, 23, 27, 34-39 Morrison **teaches** displays for time-varying binary-valued electrical signals (col. 1, lines 66-67 and col. 2, lines 1-67); Morrison further **teaches** a driving method for a display apparatus, wherein a frequency of a clock signal, used to drive a display panel, is continuously varied, and said display panel is driven with said frequency varying clock signal (col. 5 lines 10-21 and Fig. 1).

The difference between the teachings of the instant invention and that of the Morrison reference is that the instant invention is directed to the reduction of peak values of the display noise by

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varying the display panel driving frequency wherein Morrison reference facilitate generating a time-varying binary-valued electrical input signal used to selectively illuminate light-emitting elements that are arranged in a matrix.

It would have been obvious to a person of ordinary skill in the art at the time of the invention that the limitations as set forth in claims 1, 10, 14, 19, 2, 27 and 34-39 are addressed in the teachings of Morrison.

Regarding claims 2, 15 and 28, Morrison **teaches** the driving method for a display apparatus wherein the clock signal used to drive said display panel is a source clock signal of said display apparatus (col. 5, lines 10-21 and Fig. 1).

4 Claims 4, 8, 12, 17, 21, 25 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison as applied to claims 1, 6, 10, 14, 19 and 23, respectively in item 3 hereinabove, and further in view of Admitted Prior Art (Applicant's Disclosure, page 7, lines 1-8 and Applicant's Fig. 1)

Regarding claims 4, 8, 12, 17, 21, 25 and 30, Morrison **does not teach** said display apparatus being a plasma display apparatus.

Morrison teaches a binary-signal display employing a matrix of illuminative elements.

Applicant's Disclosure **teaches** said display apparatus wherein said display apparatus is a plasma display apparatus (Applicant's Disclosure, page 7, lines 1-8).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Morrison, the feature as taught by Admitted Prior Art in order to expand the driving method as taught by Morrison to a plasma display apparatus.

5. Claims 5, 9, 13, 18, 22, 26 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison as applied to claims 1, 6, 10, 14, 19 and 23 respectively in item 3 hereinabove, and further in view of Tanaka et al (USP 6,130,420).

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Regarding claims 5, 9, 13, 18, 22, 26 and 31, Morrison **does not teach** said display apparatus wherein during a quiescent period, said clock generating circuit performs control of said clock used for driving said display panel.

Morrison teaches a binary-signal display employing a matrix of illuminative elements.

Tanaka et al. **teaches** an image sensing apparatus and a method for driving said apparatus (col. 1, lines 63-67, col. 2; lines 1-67 and col. 3, lines 1-18). Tanaka et al. further **teaches** said display apparatus wherein during a quiescent period, said clock generating circuit performs control of said clock used for driving said display panel (col. 2, lines 31-67 and col. 3, lines 1-2).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Morrison, the feature as taught by Tanaka et al. in order to permit the clock generating circuit to exercise control of the clock used for driving the display panel only during a quiescent period so as to not interfere with other functions being performed relative to the display panel during the non-quiescent periods.

6. Claims 6 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagdt (DE 4112672 A1).

Relative to claim 6 and 40, Jagdt **teaches** a driving method for a display apparatus having a display panel, wherein a peak noise output of the display panel is reduced by switching a clock signal, used to drive the display panel, between at least two frequencies in accordance with time conditions (Abstract).

The difference between the teachings of Jagdt and that of the instant invention is that though both teachings are directed at the reduction of noise by varying the frequencies in accordance with time, the instant invention is applied to a display panel wherein the teachings of Jagdt are directed to reducing the noise of a processor system.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Morrison the feature as taught by Jagdt in order to reduce the noise output of the display panel.

7. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison as applied to claim 27 in item3 hereinabove, and further in view of Nakata et al. (USP 5,206,729).

Relative to claim 32, Morrison **does not teach** said driving method for a display apparatus wherein said driving of the display panel reduces peak values of noise emitted by the display panel.

Morrison teaches a binary-signal display employing a matrix of illuminative elements.

Nakata et al. **teaches** an image switching apparatus for producing special video effects (col. 3, lines 41-68 and col. 4, lines 1-34); Nakata et al. further **teaches** said driving method for a display apparatus wherein said driving of the display panel reduces peak values of noise emitted by the display panel (col. 9, lines 6-11 and Fig. 5).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Morrison the feature as taught by Nakata et al. in order to provide the means to control image flicker (col. 9, lines 3-5, Nakata et al.).

8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison as applied to claim 27 in item3 hereinabove, and further in view of Cooper (USP 4,305,091).

Regarding claim 33, Morrison **does not teach** said driving method for a display apparatus wherein said driving of the display panel spreads out frequencies of noise emitted by the display panel.

Morrison teaches a binary-signal display employing a matrix of illuminative elements.

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Cooper **teaches** an electronic noise reducing apparatus and method (col. 1, lines 5-33);

Cooper further **teaches teach** said driving method for a display apparatus wherein said driving of the display panel spreads out frequencies of noise emitted by the display panel (col. 9, lines 17-35).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Morrison the feature as taught by Cooper in order to minimize the noise emitted by the display panel.

9. Claims 41, 42, 43, 44, 45, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison as applied to claims 10, 19, 23, 34, 35 and 38, respectively (with both claims 43 and 47 being applied to claim 23) in item 3 hereinabove, and further in view of Jagdt.

Regarding claims 41-47, Morrison **does not teach** a display apparatus wherein the clock signal time switched between said at least two frequencies in accordance with the time conditions is periodically time switched between said at least two frequencies to reduce the peak nose output of the dipay panel

Morrison teaches a binary-signal display employing a matrix of illuminative elements.

Jugdt **teaches** a display apparatus wherein the clock signal time switched between said at least two frequencies in accordance with the time conditions is periodically time switched between said at least two frequencies to reduce the peak nose output of the display panel (Abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Morrison the feature as taught by Jagdt in order to reduce the noise output of the display panel.

Allowable Subject Matter

10. Claims 7, 11, 20, and 24 allowed.

11. The following is an examiner's statement of reasons for allowance:

Regarding claim 7, the major difference between the prior art of record (USP 3,906,482, Morrison and USP 6,130,420, Tanaka et al.) and that of the instant invention is that said prior art **does not teach** a driving method for a display apparatus having a display panel, wherein a peak noise output of the display panel is reduced by sequentially switching a clock signal, used to drive the display panel, between at least two frequencies, two frequencies lying within plus or minus 1 percent of a reference frequencies being set for said clock signal used to drive said display panel.

Relative to claim 11 the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art **does not teach** a driving method for a display apparatus wherein derive waveforms for a display panel are provided corresponding to at least two frequencies, and said display panel is driven by sequentially switching an output drive waveform between said drive waveforms corresponding to said at least two frequencies, and drive waveforms for said display panel corresponding to two frequencies lying within plus or minus 1 percent of a reference frequency.

Regarding claim 20, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art **does not teach** a display apparatus comprising; a clock generating circuit; a drive waveform generating circuit generating a drive waveform by using a clock signal from said clock generating circuit having a sequentially switched frequency switched between at least two frequencies; and a display panel displaying an

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image in accordance with said drive waveform, wherein said drive waveform generating circuit drives said display panel by outputting the drive waveform having a switched frequency in accordance with said sequentially switched clock signal, wherein said clock signal sequentially switched between two frequencies is within plus or minus 1 percent of a referenced frequency. Relative to claim 24, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art **does not teach** a display apparatus comprising; a clock generating circuit; a drive waveform generating circuit generating a drive waveform by using a clock signal from said clock generating circuit having a sequentially switched frequency switched between as least two frequencies; and a display panel displaying an image in accordance with said drive waveform, wherein said drive waveform generating circuit drives said display panel by sequentially switching an output drive waveform between drive waveforms corresponding to at least two frequencies, wherein said drive waveform generating circuit sequentially switches said output drive waveform between drive waveforms corresponding to two frequencies lying with plus or minus 1 percent of a reference frequency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

12. Claims 3, 16 and 29, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Relative to claims 3, 16, and 29, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** said display apparatus wherein said clock generating circuit generates a clock whose frequency varies continuously within a range of plus or minus 1 percent of a reference frequency.

Regarding claim 32, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a driving method for a display apparatus wherein driving of the display panel reduces peak values of noise emitted by the display panel.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	5,917,461	Sakami et al.
U. S. Patent No.	5,748,165	Kubota et al.
U. S. Patent No.	3,889,225	McKenzie et al.


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Responses

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E Kovalick whose telephone number is 703 306-3020. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703 305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9314 for regular communications and 703 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 306-0377.


Vincent E. Kovalick
December 5, 2003


Bipin Shalwala
Supervisor